

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
6 January 2005 (06.01.2005)

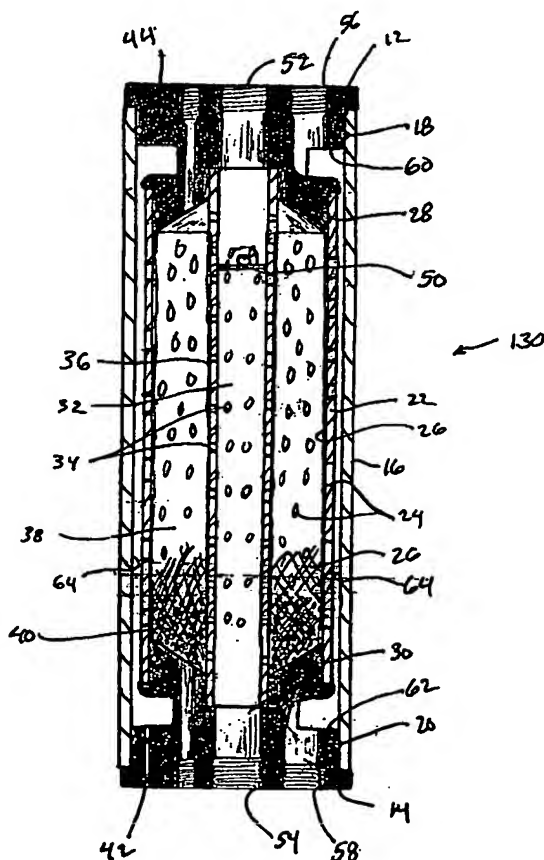
PCT

(10) International Publication Number
WO 2005/000745 A2

- (51) International Patent Classification⁷: **C02F**
- (21) International Application Number:
PCT/US2004/018654
- (22) International Filing Date: 12 June 2004 (12.06.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/478,254 13 June 2003 (13.06.2003) US
60/484,097 1 July 2003 (01.07.2003) US
60/562,202 14 April 2004 (14.04.2004) US
60/562,927 16 April 2004 (16.04.2004) US
- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US 60/562,927 (CON)
Filed on 16 April 2004 (16.04.2004)
- (71) Applicant and
(72) Inventor: MARTIN, John, D. [US/US]; 4303 Seymour Highway, Wichita Falls, TX 76309 (US).
- (74) Agent: CHAUZA, Roger, N.; Chauza & Handley, LLP, P.O. Box 140036, Irving, TX 75014 (US).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: FLUID TREATMENT AND MEDIA MANAGEMENT DEVICE



(57) Abstract: A fluid treatment and media management device having concentric inner and outer perforated cylinders defining a chamber therebetween for containing a media. A case surrounds the perforated cylinders and forms an annular space between the case and the outer perforated cylinder. Respective end caps engage the opposite ends of the case and perforated cylinders to support such members. One or both of the end caps provide ports to the central core of the inner perforated cylinder, to the media chamber and to the annular space. The media can be removed from the fluid treatment and media management device without disassembly of the device for the purpose of disposal and/or regeneration of the media.

WO 2005/000745 A2

BEST AVAILABLE COPY



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *without international search report and to be republished upon receipt of that report*

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
6 January 2005 (06.01.2005)

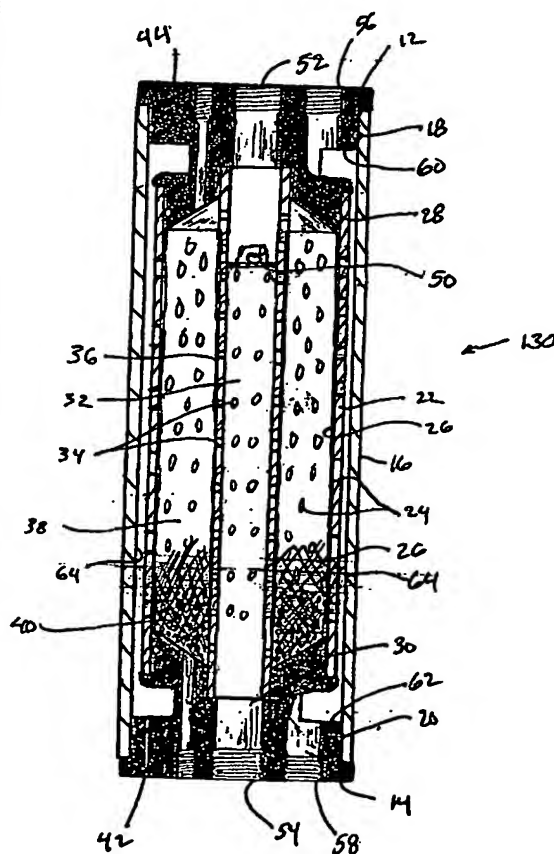
PCT

(10) International Publication Number
WO 2005/000745 A3

- (51) International Patent Classification⁷: **B01D 15/00**, 24/38
- (21) International Application Number: PCT/US2004/018654
- (22) International Filing Date: 12 June 2004 (12.06.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/478,254 13 June 2003 (13.06.2003) US
60/484,097 1 July 2003 (01.07.2003) US
60/562,202 14 April 2004 (14.04.2004) US
60/562,927 16 April 2004 (16.04.2004) US
- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US 60/562,927 (CON)
Filed on 16 April 2004 (16.04.2004)
- (71) Applicant and
(72) Inventor: **MARTIN, John, D.** [US/US]; 4303 Seymour Highway, Wichita Falls, TX 76309 (US).
- (74) Agent: **CHAUZA, Roger, N.**; Chauza & Handley, LLP, P.O. Box 140036, Irving, TX 75014 (US).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: FLUID TREATMENT AND MEDIA MANAGEMENT DEVICE



(57) Abstract: A fluid treatment and media management device (130) having concentric inner (32) and outer (22) perforated cylinders defining a chamber (38) therebetween for containing a media. A case (16) surrounds the perforated cylinders and forms an annular space (64) between the case and the outer perforated cylinder. Respective end caps (12, 14) engage the opposite ends of the case and perforated cylinders to support such members. One or both of the end caps provide ports to the central core of the inner perforated cylinder, to the media chamber and to the annular space. The media can be removed from the fluid treatment and media management device without disassembly of the device for the purpose of disposal and/or regeneration of the media.

BEST AVAILABLE COPY



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*

(88) Date of publication of the international search report:

10 March 2005